

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions of claims in the application:

LISTING OF CLAIMS:

1. (CURRENTLY AMENDED) A magnetic head, comprising:
a sensor having an antiparallel (AP) pinned layer structure, wherein the AP pinned layer structure includes at least two pinned layers having magnetic moments that are self-pinned antiparallel to each other, the pinned layers being separated by an AP coupling layer; and
a pair of compression layers positioned towards opposite track edges of the sensor, the compression layers providing compressive stress to the sensor, the compression layers being adapted for enhancing the antiparallel pinning of the pinned layers of the AP pinned layer structure.
2. (ORIGINAL) A head as recited in claim 1, wherein the compression layers are constructed of metal.
3. (ORIGINAL) A head as recited in claim 1, wherein the compression layers are constructed of rhodium.
4. (WITHDRAWN) A head as recited in claim 1, wherein the compression layers are constructed of tantalum.
5. (WITHDRAWN) A head as recited in claim 1, wherein the compression layers are constructed of tungsten.
6. (WITHDRAWN) A head as recited in claim 1, wherein the compression layers are constructed of a dielectric material.

7. (ORIGINAL) A head as recited in claim 1, wherein the compression layers are positioned substantially outside the track edges of the sensor.
8. (WITHDRAWN) A head as recited in claim 1, wherein the compression layers are substantially aligned with the sensor.
9. (PREVIOUSLY PRESENTED) A head as recited in claim 1, further comprising hard bias layers positioned below the compression layers.
10. (PREVIOUSLY PRESENTED) A head as recited in claim 1, further comprising shield layers positioned above and below the sensor, and at least one electrically insulative layer positioned adjacent each of the compression layers for preventing conduction of electricity through the compression layers from one shield layer to the other shield layer.
11. (PREVIOUSLY PRESENTED) A head as recited in claim 1, further comprising shield layers positioned above and below the sensor, and at least one electrically insulative layer positioned adjacent each of the compression layers for preventing conduction of electricity through the compression layers from the sensor to one of the shield layers.
12. (PREVIOUSLY PRESENTED) A head as recited in claim 1, wherein the head is a GMR head.
13. (PREVIOUSLY PRESENTED) A head as recited in claim 1, wherein the head is a CPP GMR sensor.
14. (PREVIOUSLY PRESENTED) A head as recited in claim 1, wherein the head is a CIP GMR sensor.

15. (PREVIOUSLY PRESENTED) A head as recited in claim 1, wherein the head is a tunnel valve sensor.
16. (CURRENTLY AMENDED) A magnetic head, comprising:
a sensor having an antiparallel (AP) pinned layer structure, wherein the AP pinned layer structure includes at least two pinned layers having magnetic moments that are self-pinned antiparallel to each other, the pinned layers being separated by an AP coupling layer; and
a pair of compression layers positioned towards opposite track edges of the sensor, the compression layers providing compressive stress to the sensor, the compression layers being adapted for enhancing the antiparallel pinning of the pinned layers of the AP pinned layer structure; wherein the compression layers are positioned substantially outside the track edges of the sensor.
17. (ORIGINAL) A head as recited in claim 16, wherein the compression layers are constructed of metal.
18. (ORIGINAL) A head as recited in claim 16, wherein the compression layers are constructed of rhodium.
19. (WITHDRAWN) A head as recited in claim 16, wherein the compression layers are constructed of tantalum.
20. (WITHDRAWN) A head as recited in claim 16, wherein the compression layers are constructed of tungsten.
21. (WITHDRAWN) A head as recited in claim 16, wherein the compression layers are constructed of a dielectric material.

22. (WITHDRAWN) A head as recited in claim 16, wherein the compression layers are substantially aligned with the sensor.
23. (PREVIOUSLY PRESENTED) A head as recited in claim 16, further comprising hard bias layers positioned below the compression layers.
24. (PREVIOUSLY PRESENTED) A head as recited in claim 16, further comprising shield layers positioned above and below the sensor, and at least one electrically insulative layer positioned adjacent each of the compression layers for preventing conduction of electricity through the compression layers from one shield layer to the other shield layer.
25. (PREVIOUSLY PRESENTED) A head as recited in claim 16, further comprising shield layers positioned above and below the sensor, and at least one electrically insulative layer positioned adjacent each of the compression layers for preventing conduction of electricity through the compression layers from the sensor to one of the shield layers.
26. (PREVIOUSLY PRESENTED) A head as recited in claim 16, wherein the head is a GMR head.
27. (PREVIOUSLY PRESENTED) A head as recited in claim 16, wherein the head is a tunnel valve sensor.
28. (WITHDRAWN) A magnetic storage system, comprising:
magnetic media;
at least one head for reading from and writing to the magnetic media, each head having:
a sensing element having the structure recited in claim 1;

a write element coupled to the sensor;
a slider for supporting the head; and
a control unit coupled to the head for controlling operation of the head.